



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/018,809 | 03/25/2002 | Anand Srinivasan | WLJ.078 | 2132 |
| 7590 03/19/2004 | | | EXAMINER | |
| Volentine Francos Suite 150 12200 Sunrise Valley Drive Reston, VA 20191 | | | GOUDREAU, GEORGE A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1763 | |
| DATE MAILED: 03/19/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,809

Applicant(s)

SRINIVASAN ET AL.

Examiner

George A. Goudreau

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on (12-01' to 12-03').
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

George A. Goudreau
GEORGE GOUDREAU
PRIMARY EXAMINER
3-041

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. Claims 4, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-The wording used in claims 4, and 13 is confusing. The examiner is uncertain what combination of gasses applicant is trying to claim in these claims. Applicant should reword these claims.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Carlstrom et. al. (12-1999').

Carlstrom et. al. disclose a process for the ribe etching of a InP layer on top of a GaInAsP substrate using an etch mask which is comprised of Si₃N₄, and a plasma which is comprised of either of trimethylamine (TMA) or trimethylamine-argon. This is discussed on pages 2660-2663. This is shown in figures 1-4.

4. Claims 1-6, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujiwara et. al. (5,534,109).

Fujiwara et. al. disclose a process for etching a HgCdTe substrate using a patterned resist etch mask, and a plasma which is comprised of any of methylamine (MA), or dimethylamine (DMA). An inert gas such as argon may optionally be added to the plasma etchant. An ECR etching apparatus may be

used to conduct a low damage etching process. This is discussed specifically in column 6; and discussed in general in columns 1-8. This is shown in figures 1-10.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 7-11, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the reference as applied in paragraph 4 above.

The reference as applied in paragraph 4 above fail to specifically disclose the following aspects of applicant's claimed invention:

- the specific etch process parameters which are claimed by the applicant; and
- the specific usage of the type of etching apparatus which is claimed by the applicant

It would have been obvious to one skilled in the art to employ the specific type of etching apparatus which is claimed by the applicant in the etching process taught above. The usage of the specific types of etching apparatus which are claimed by the applicant is conventional or at least well known in the plasma etching arts. (The examiner takes official notice in this regard.) Further, this simply represents the usage of an alternative, and at least equivalent means for conducting the etching process taught above to the specific means which are taught above.

It would have been prima facie obvious to employ any of a variety of different etching process parameters in the etching process taught above. These are all well known variables in the plasma etching art, which are known to affect both the rate and the quality of the plasma etching process. Further, the selection of particular values for these variables would not necessitate any undo experimentation, which would have been indicative of unexpected results.

Alternatively, it would have obvious to one skilled in the art to employ the specific etch process parameters which are claimed by the applicant based upon In re Aller as cited below.

"Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F. 2d 454, 105 USPQ 233, 235 (CCPA).

Further, all of the specific process parameters, which are claimed by the applicant are results effective variables whose values are known to affect both the rate, and the quality of the plasma etching process.

8. Claims 5-11, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the reference as applied in paragraph 3 above.

The reference as applied in paragraph 3 above fail to specifically disclose the following aspects of applicant's claimed invention:

- the specific etch process parameters which are claimed by the applicant; and
- the specific usage of the type of etching apparatus which is claimed by the applicant

It would have been obvious to one skilled in the art to employ the specific type of etching apparatus which is claimed by the applicant in the etching process taught above. The usage of the specific types of etching apparatus which are claimed by the applicant is conventional or at least well known in the plasma etching arts. (The examiner takes official notice in this regard.) Further, this simply represents the usage of an alternative, and at least equivalent means for conducting the etching process taught above to the specific means which are taught above.

It would have been prima facie obvious to employ any of a variety of different etching process parameters in the etching process taught above. These are all well-known variables in the plasma etching art, which are known to affect both the rate and the quality of the plasma etching process. Further, the selection of particular values for these variables would not necessitate any undo experimentation, which would have been indicative of unexpected results.


Art Unit: 1763

Alternatively, it would have obvious to one skilled in the art to employ the specific etch process parameters which are claimed by the applicant based upon In re Aller as cited above.

Further, all of the specific process parameters which are claimed by the applicant are results effective variables whose values are known to affect both the rate, and the quality of the plasma etching process.

9. Any inquiry concerning this communication should be directed to examiner

George A. Goudreau at telephone number 571-272-1434.


George A. Goudreau
Primary Examiner
Art Unit 1763